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All communications to the Editors should be addressed to PROFESSOR FREDERICK J. E. WOODBRIDGE, or Professor WENDELL T. BUSH, Columbia University, New York City.

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The Journal of Philosophy
Psychology and Scientific Methods

THE ASYMMETRY OF REALITY

MY thesis is that all the things we know, be they minds, bodies, societies, or groups of these, are asymmetrically constituted. They are composed of units which are unequal in function and value, and the units themselves are made up of further units unequal in function and value, and so on indefinitely. It is not the unit-composition, the atomism, that is here the important feature; it may be that in the world of mind atomism is only a figure of speech and that even the physical world is ultimately a continuum. It is the asymmetry of structure that is the significant trait; for, as I hope to show, it is by virtue of that trait that things move, grow, or produce—in short, play their parts in the drama of reality.

We are to proceed inductively, tracing the alleged structure in one department of the world after another. And let us begin with the human psychophysical organism.

In normal waking life, probably all, or nearly all, of the central nervous system is continually the seat of disturbance. The nerve-currents never wholly die out. Yet only a little of this activity corresponds to or makes up the conscious state. As one gazes over the landscape, and memories flit through the mind, the currents in the visual centers, certain associative fibers, and one or two other sensory tracts, alone of all the brain-processes are above the level of consciousness. Out of the legion of nervous activities these few emerge from the depths of the unconscious, as the least part of an island is above the ocean's surface. And having emerged into the light of consciousness, they and their consequences dominate the behavior of the organism, as man's mind controls his bodily movements. It is only in dreams, when the organism is no longer an efficient unit in the world, that conscious control practically ceases. Indeed we might from one point of view define consciousness as the selection, due to some unknown agency, of certain nerve-processes from the great mass of bodily phenomena, and the conferring upon them of more or less power to guide the rest.

Passing now to the field of consciousness itself, we find an analogous situation. In a momentary cross-section, there is a center, the

focus of attention, and a margin usually larger and less clear. As a rule the center is more effective than the margin; it is stronger to call up associated ideas and to guide conduct. The extreme case is perhaps the attempt to solve a problem, where the data or the desired result are the center, and determine by association the appearance of many tentative solutions, and the selection of promising ones from the remainder. In idle reverie, on the other hand, when thought is serving no definite purpose, this domination by the center is at a minimum. It is when attention is active and thought is an effective element in organized behavior, that this asymmetrical structure is prominent.

With our consciousness of the past, or memory, selectiveness is patent. Of the multitude of our past experiences, few leave sufficient trace to be subject to recall; of those that do so, again, few are those that are actually recalled. Vastly more events disappear from primary memory than ever appear in secondary memory. What we do recall of the past usurps the place and meaning of the rest, and thereby represents the past; we judge the latter by the infrequent remembered instances which represent the forgotten crowd of experiences. It is like conceptual thought, in which we represent a general idea by some particular symbol or image whose content may be quite irrelevant. When I think of gravitation, I picture an apple-tree; that symbol is capable of calling up the long train of ideas which would elucidate the full meaning and generality of the term; but consciousness, which economizes, retains but the one idea of the apple-tree, and this replaces the whole series. In the mind as in the political arena, a class is represented by one; and this one is able to call up the others. So far, indeed, as it has this power of controlling their appearance, is it serviceable for conceptual thought. And nothing is more obvious than that this power of selection and exclusive emphasis is necessary to the efficiency of consciousness. Were all the events of the past, and all the meaning of every concept we employ, equally potent over attention, we should be unable to act.

Nor is the state of affairs essentially different as regards emotion and will. A deliberate act of will, a conscious choice, is a selection of one out of several possibilities. If I debate with myself whether to take the nine or the ten o'clock train, these are, as the student of behavior would say, two tendencies competing in my organism. One of them triumphs; I decide upon the later train. This decision, as Professor Royce was fond of pointing out, cuts off a whole class of possibilities; it also creates a whole class. By waiting an hour longer, I am able to do many things otherwise left undone. Nobody knows, perhaps, just how a voluntary decision is accom-

plished; but certainly it is a selection of one from a class of possibilities and the endowing of that one with power to suppress some, to aid others, and to create still others entirely novel. Or consider the case of a mature will in a strongly developed personality. There is here not only coordination of motives, but control by one. A single ruling purpose is the guiding factor of many deeds. A powerful character is never symmetrical; he is predominantly artist, scientist, statesman, or other specialty. Always some ruling type of conduct is found, to which the remaining acts are subordinated. Not coherence so much as government of many impulses by one, is the essence of personality; and the greater the man, the clearer is this one-sidedness, for character and uniqueness go together.

Emotion also is centered: we love some one, we hate some one, we fear some object. Unless it is thus individuated, the emotion is not effective. However universal be sympathy, it must be concentrated if it is valuable. Jesus, the most universally compassionate figure of history had his picked disciples, and of these he had his favorites. Had he not done so, it would have been impossible to spread abroad his doctrine. The preaching of a gospel, like education, is pyramidal. It proceeds from the pinnacle to the base in ever widening areas of influence; the great mass of mankind is reached only gradually, and this asymmetrical procedure has ever been found necessary to a lasting effect.

The structure of mind, in short, is through and through uneven; at the extreme of highest value, personality displays its one-sided equilibrium, with its subordination of many traits to one dominating purpose, and at the other extreme, the momentary cross-section shows the same character, while the main functions, will, emotion, conception, memory, reveal the identical composition. And in every case the efficacy, be it of a person, or of a single mental process, is found to depend upon the asymmetrical structure.

There are two ways of viewing human society: in cross-section and in history. At a given period, the human race (itself dominating other races of living things) is divided into many nations; of these some few are the prominent ones, sometimes even the exploiters. In each nation, of course, we find the rulers and the far more numerous ruled. Each nation becomes powerful only by such organization; thus only does it possess equilibrium and become a stabilized society which can develop a literature, an educated class, a characteristic tone which it contributes to the world-culture. Without the equilibrium, its people are too much occupied in the struggle for existence to make up an effective unit of human progress. The rulers may be selected by their own usurpation, or their

ancestors, or by the free choice of the people, according as the government is monarchy or republic; and between these extremes lie many grades. But whether it is usurped or granted, the rulers have always a measure of independent power, and the relation of them to their people is clearly analogous to what we found in the individual mind. Among the mass of the people, too, we have many subordinate units. In societies so complex as the modern western nations, these minor units are almost uncountable; they range from social clubs to professional associations, leagues for useful ends, schools, churches, *etc.*—all of which have a centralized organization as a condition of continued existence and effectiveness. The greater the social sense of its individuals, the more of these minor units, or concretions in the social tissue, a given community will contain. They overlap, possessing common members; but they are distinct nodes separated by those sparser portions occupied by the less socially active citizens. The state of affairs might be pictured somewhat after the manner of the arrangement of the stars; closely grouped in many spots, thinly scattered between, and without any apparent regularity of distribution. Such a picture in fact portrays very fairly that general structure of reality which I am trying to present: more or less of a great continuum, with dense aggregations or nodes, each remote enough from its neighbors to be relatively independent, and each surviving because it is held together as a permanent unit by virtue of its centralized and asymmetrical formation.

If the person is the ultimate unit of society, the family is the penultimate one, and should not go unmentioned. Its make-up is obviously enough an example of the same law. In its inception, the asymmetery is extreme; for the parents create the children and exercise over them a supreme control. As development proceeds, the children gradually assume equality with the parents; when this is attained, the asymmetry vanishes, the family normally breaks up as a social unit, and the children themselves start new families.

Envisaging human phenomena in historical perspective, we obtain a like result. History is no tissue of uniform density, but reveals crises, tides in the affairs of men, when vital decisions are made. In the life of the single-celled animal, there comes a period in its growth when its volume is too great for the surface through which it takes food; if its life is to continue, it must divide into two cells. Such division is parturition; reproduction thus marks a critical point in growth, a node from which branches a new organism. In history such critical points occur when a new nation grows out of an older; when, for example, the thirteen colonies broke away from England, or when the waxing strength of Christianity com-

pelled Constantine to avow that religion, or when the Protestant emerged from the Catholic Church; there are thousands of other instances. Such occasions had doubtless gradually prepared themselves as a great mass-phenomenon in the minds of peoples, but the crucial step, taken always by some leader, is of greater importance than any single stage in the preparation. Such a step preeminently controls the destiny of the people concerned. Historians used to chronicle the battles, the royal edicts, the rise and fall of kings and heroes; to-day they prefer to trace the more hidden development of peoples and institutions, of class-consciousness. Yet the older way was based upon a sound instinct. The outstanding figures, the great men, accomplished more than any other one person; and in unconscious recognition of this truth we always find the hero more interesting than the average man—which is why nobody really wishes to be commonplace or really believes that he is so. We may admit that the great man is but the product of his forebears and his environment, or we may declare that he is a force *de novo,* and an original creator. Yet even if he were but a passive reflector of the social waves of his time, it remains true that he, and he alone, was able to gather up the many rays and focus them in a powerful beam of light. Whether mirror or sun, he is equally distinguished from his fellows. He is still the luminous point whence radiate the forces that control the future; and without that concentration and rearrangement, great changes have not ever occurred.

Let us now pass from the world of humanity to the world of Nature; and first to the inorganic side. The starry heavens look to the layman quite unbounded and irregular. Yet an eminent astronomer tells us that "the universe, so far as we can see it, is a bounded whole. It is surrounded by an immense girdle of stars, which, to our vision, appears as the Milky Way. While we can not set exact limits to its distance, we may yet confidently say that it is bounded."[1] ". . . the stellar system is not an irregular chaos," but is "built up with special reference to the Milky Way as a foundation" (p. 38). "We might have agglomerations of stars like those of the Milky Way situated in some corner of the system, or at its center, or scattered through it here and there in every direction. But such is not the case. There are, indeed, a few star-clusters scattered here and there throughout the system; but they are essentially different from the clusters of the Milky Way, and can not be regarded as forming part of the general plan. In the case of the galaxy we have no such scattering, but find the stars built, as it were, into this enormous ring, having similar characteristics throughout nearly its whole ex-

[1] Newcomb, *Side-Lights on Astronomy,* p. 74.

tent, and having within it a nearly uniform scattering of stars, with here and there some collected into clusters" (pp. 50–51). "What has yet more significance, it is in some respects unlike those parts of the universe which lie without it, and even unlike those which lie in that central region within it where our system is now situated. The minute stars . . . which form its cloud-like agglomerations are found to be mostly bluer in color, from one extreme to the other, than the general average of the stars which makes up the rest of the universe" (pp. 62–63).

We may recall that Kant was filled with awe equally by the contemplation of the starry heavens and of the moral law. Is it not an odd coincidence that we find a somewhat similar constitution in both—in the stars arranged about the ring-nucleus as a sort of directing influence, and in the act of moral choice which selects one tendency from many and subordinates to it the rest?

Descending nearer to our earth, we find such a fact as the solar system. It is believed that this is a sort of stellar unit; that probably the stellar world is largely made of similar systems. Its make-up is, of course, quite asymmetrical; not, to be sure, in the geometrical sense, but functionally. The sun, vastly larger and more energetic than any of its planets, has not only (probably) given rise to them, but dominates their courses. It is, indeed, the source of all terrestrial life. And only by this domination is the whole system held in equilibrium. In so far as it forms anything like an organism of mutually dependent parts, that is because of the centralized power of the sun (a consideration whose importance will occupy us later when we analyze the notion of organism).

For convenience of exposition let us now proceed to the opposite extreme: the smallest known physical unit, the electron. It marks the limit, at present, of scientific penetration; nothing seems to be known about its constitution. It is perhaps spherical, or nearly so, and all electrons are supposed to be practically equal in charge. But we can not find any evidence as to structure until we come to the next higher units, the chemical atoms. Let us see what science has to say of these.

". . . It now seems highly probable that the [chemical] atom is made up of a minute, positively charged nucleus surrounded by several rings, or better, *regions* of electrons. The total number of electrons is such that their total negative charge is equal to the positive charge on the nucleus . . . the major part of the volume of an atom is unoccupied in the ordinary sense of the word [*i. e.*, it is made of discrete units]. . . . The nucleus is composed of a certain amount of negative electricity and a *larger* total amount of positive elec-

tricity."[2] "The electrons surrounding the nucleus are probably in motion about it" (p. 45).

"Certain modern considerations . . . make it seem altogether likely that the atom is really a system of rapidly rotating particles which are very much smaller than the atom itself. If this theory should prove to be true the size and shape of the atom would merely be those of the 'orbits' of the outermost of these rotating particles, just as the size and shape of the solar system depends upon those of the orbits of the outermost planets" (p. 61).

Thus electrons are combined in a centralized or functionally asymmetrical way into the next higher unit, the chemical atom.

And such a mode of aggregation endows them with a rich productiveness, even as in human society and in mind an analogous way of combination was the condition of efficiency. Electrons joined into atoms make possible diverse chemical substances, and eventually the enormous number of kinds and qualities of matter. Unorganized electrons are the seat of radiant energy (heat, light, wireless waves), of electricity and magnetism. Not being united in stable groups, they do not form permanent structures, but only processes. Permanent structures like the atom, however, render higher combinations possible, such as the molecule, the crystal, colloid, and living cell—all of which make up what we call gross matter. Gross matter, in fact, simply means a collection of parts which hold together long enough, and recur often enough, to be recognizable, *i. e.*, to display a relative persistence and a character upon which we may count. (The importance of this permanence was brought out by Kant in his First Analogy.) Processes or qualities, on the other hand, are but collections which do not possess such fixity; the electric current, *e. g.*, which is a succession of moving electrons, or light, which is a succession of oscillating electrons. What we know as different kinds of substance, such as wood, iron, earth, air, water, could not be, in short, without the sort of one-sided system which is made by the association of electrons into the atom. Still less could there be worlds, solar systems, constellations. The universe would be one of Heraclitean flux. The highly organized material reality we know, with its infinite wealth of things and properties, would not exist but for the asymmetrical union of the electrons into stable structures.

When atoms combine into molecules, it is believed that the cause lies probably in the attraction between the electrons composing the former. But not all of them; only the surface ones. "Now, there is little doubt that it is the outer or 'valency' electrons which are

[2] Comstock and Troland, *The Nature of Matter and Electricity*, p. 44.

active, and change their positions in chemical reactions."[3] This is not true in all cases of energy-transfer from the atom. In the case of atomic disintegration, as with radium, the electrons are said to be given off from the positive nucleus of the atom; but when atoms combine into the next higher unit, the molecule, it is the outer electrons that are the links which hold them together. According to the view of Stark, "a chemical combination between two atoms represents . . . a simultaneous attraction of both atoms for the same electron, which thus forms a bond between the atoms."[4] Electrons are conceived as lying between the several atoms which compose the molecule. "This theory gives a very definite meaning to the 'bonds' of ordinary chemical notation. A bond represents an electron which is attracted notably by both of the atoms which it joins."[5] There is certainly a one-sidedness of function, in that certain electrons out of those composing the atoms do the work of the combination. While of course much of this is speculative, it is significant that in so far as definite hypotheses have been framed, they do seem to ascribe to some elements of the molecule a central rôle; these being specially responsible, as it were, for its unity. And we must add that with molecule as with atom, the equilibrium which the asymmetrical arrangement ensures is a prerequisite for the existence of "gross matter."

Consider now events in the world of gross matter. When in a given situation nothing is happening, there is an equal balance of potential energies. In fact, potential energy is just energy that is opposed by an equal energy; as with the ball resting on the table or the water pressing against the side of the pail. Inequality between the potential energies is the condition of something occurring. One-sidedness is what differentiates a dynamic from a static world. And in this one-sidedness, note that energy flows from the higher to the lower level. The warmer body gives off its heat to the cooler; science does not say that the cooler gives off its coolness to the warmer. One is more of a cause than the other. In general the causal relation is one-sided; a fact which some idealists, loving symmetry as they do, endeavor to explain away. But we need not here enter upon the whole question, whether cause and effect are mutually implicative. It may be granted that they are, while yet we find that the cause has a certain dynamic priority which the effect does not share.

Action and reaction are equal, of course; yet in a changing

[3] Comstock and Troland, *op. cit.*, p. 89.

[4] N. Campbell, *Modern Electrical Theory*, 2d ed., p. 341.

[5] *Op. cit.*, p. 345.

world it takes time before the equation is accomplished; and the action is precipitated by an individual body of higher level than the *milieu*. When action and reaction are equated, nothing more occurs.

Turn now to the realm of biology: here we must begin with the cell and its two parts, the nucleus and cytoplasm.

The relation of nucleus and cytoplasm is roughly somewhat as follows: the nucleus is the seat of greater activity and is more constructive. In fertilization, the active spermatozoon contains mainly nuclear material. The head, which is almost all nucleus, leads the way; it is the pronuclei that fuse, and in the nucleus the process of mitosis begins. It is not until after the daughter nuclei are separated (in the last phase) that the cytoplasm begins to constrict and divide. The nucleus contains the chromosomes, which seem to be purveyors of the inheritance of individual traits. In the living organism when no fertilization is occurring, the nucleus is still the more active. Rich in phosphorus, it seems to be the seat of assimilation, growth and repair. Denucleated cells may for a time remain alive, though without adding new tissue. The integrity of the nucleus seems to be essential to cell-life, for whereas the cytoplasm may vary in shape, the nucleus preserves a fairly constant and nearly spherical form. The more active the metabolism, the larger the nucleus. Cytoplasm would seem to be a reservoir in which the nutrient material is stored up; for example in eggs, which attain great size by reason of the amount of food they contain. ". . . The differentiation of the cell-substance into nucleus and cytoplasm is the expression of a fundamental physiological division of labor in the cell. . . . in the entire absence of a nucleus, protoplasm is able for a considerable time to liberate energy and to manifest coordinated activities dependent on destructive metabolism. . . . the nucleus is ultimately concerned in the constructive or synthetic process, whether chemical or morphological."[6] Also "there is reason to believe that it [distinction of these two] is in some manner an expression of the dual aspect of the fundamental process of metabolism, constructive and destructive, that lies at the bottom of all life."[7] Hereby the nucleus appears to be predominantly the maintainer if not the creator of the cytoplasm; the latter is the retainer of potential energy which it receives from the nucleus, uses and finally loses. The relation between them is like that of agent and patient; the nucleus being the dominant one, though both are necessary to life.

In the highly developed organism there is a clear difference of

[6] Wilson, *The Cell in Development and Inheritance*, p. 358.
[7] *Op. cit.*, p. 22.

emphasis. Functionally, one or a few organs are the rulers. As we proceed from lower organisms to higher, this is the more evident. ". . . the most thorough-going despotism exists in the higher animal in the dominion of the nerve-cells over the cells of all kinds of tissues. The higher we go in the animal series, the more we see the tendency of the nerve-cells to extend their dominion to all the tissues of the body. The loss of independence thus resulting goes so far in many tissue-cells that their vital activity sinks to a minimum so long as it is not stimulated by impulses from the nerve-cells.[8] . . . In addition to the principles of dependence and cell-differentiation a third principle comes into consideration, namely, that of centralization of administration."[9] "We have in the central nervous system a central organ which alone has the function of uniting cells, tissues, and organs with one another, so that an advantageous co-operation of them becomes possible; and the farther we ascend in the animal series, the more we find the tendency of the central nervous system to extend its authority toward a unified control of all cells and cell-complexes of the animal body."[10]

In fact, the very terms "organism" and "organization" connote asymmetry and the predominance of one principle, element, aspect, over others. What is an organized society but an asymmetrically individuated crowd? It has a leader, president or other chief officer, selected committees, the rank and file of members; it has its constitution and by-laws. Is not a living organism a similar arrangement of tissues and organs? If instead of constructing a definition upon the basis of some cherished ideal, we consider actual organisms, we shall hardly deny this. Having failed to regard such evidence, many have been misled by the doctrine of Kant. That philosopher, with a truly idealistic blindness to specific detail, foisted upon us a definition whose elegance effectually conceals its poverty. That each part is both end and means is not the essence of the organism, but a derivative property; by overlooking the essence we make the organism look so unlike the general custom of inorganic nature as to appear a *Wunder*. But an organism, our survey indicates, is essentially an order of parts and functions in equilibrium in which one part has the function of controlling the rest. The better organized a social group is, and the higher an animal, the nearer it approaches this condition. Equality of parts and community of functions mark only the lowest and least organic of living things. Division of labor and mutual support are but a consequence of this superiority of

[8] Verworn, *General Physiology*, Eng. tr., p. 572.

[9] *Op. cit.*, p. 576.

[10] *Op. cit.*, pp. 577–578.

one factor. The highly organized metazoon is only an individual cell cloven by successive fissions into many cells; its unity is no mysterious property, superadded to the many cells, but is simply the original unity, the fact that they all come from one cell. Division of labor follows division of the cell. At the beginning the single cell performed all the essential functions: nutrition, secretion, circulation, nerve-conduction, reproduction, *etc.* Each cell of the later stages retains all these functions, but some tend to assume certain functions to a greater degree than others. Some cells become organs of nerve-conduction, some of circulation, some of reproduction, and so on. This partition of function is just continuation by each cell, or group of cells, of the same tasks it originally fulfilled, in some directions increased, in others diminished. As the cell-groups (tissues, organs) become more differentiated, the connection between them itself becomes more of a distinct function, and assumes a distinct organ, the nervous system. The nervous system and its dominance over the other organs and functions is but the record, the sign manual, of the original unity of the present cell: it is that unity continued. To it is due cooperation of the many organs, their mutual support—all that equilibrium and symmetry upon which we have hitherto been wont to dwell as the true organic character. But this character, we now see, is quite secondary. It is the superiority of the centralized agency that ensures the coordination and cooperation. Upon an inductive basis, then, we should conclude that an organism, be it living or social, is functionally an asymmetrical affair; a group of things and functions controlled and systematized by one of their number.

There are many other ways in which the one-sidedness of reality might be illustrated. The irreversibility of growth in living beings is patent to all; the degradation of energy in inorganic nature, the priority of cause to effect in time, and in contrast the superiority of the final to the initial stage in the world of values. These, too, are fairly fundamental traits. But leaving now the inductive evidence, we must inquire into the significance of our results.

The structure and behavior here pointed out are too widespread to be attributed to coincidence; they would seem to reveal some law or intrinsic property of being. Nor are they superficial phenomena; in each field we have dealt with the elements, and have found that their effectiveness, their very ability to contribute as they do to their *milieu*, is due to the trait in question. Must this principle of asymmetry, however, remain a mere statistical result or can we find in the nature of things a reason for it? I believe that we can find such a reason.

First notice that the contrasted and opposite category of uniformity can hardly be an ultimate principle. The atoms of science have been said to suggest "manufactured articles." It is because they could not of themselves get to be so much alike; it would be a coincidence almost infinitely improbable. Difference, unevenness, asymmetry are *a priori* much more likely. In a chance-world, they could occur in an infinite number of ways; uniformity in but one way; which means that they need far less explanation. Asymmetry is in this sense deeper than symmetry. But why the particular type that we have found so ubiquitous and influential, *viz.*, that of asymmetrical control?

Perhaps we may assume that in any kind of a world which comprises events, physical or mental or anything we can conjure up, there will be tendencies. It seems also, almost if not wholly a corollary that these tendencies will be fulfilled if nothing opposes them. For is not that what "tendency" means, *viz.*, that something will occur unless opposed or prevented? In so far, then, as one tendency is kept from fulfilment, this must be due to an equal balance of itself and one or several others. Now in so far as such a world is at all intelligible, there must be identifiable terms: terms which have constant attributes. Absolutely constant these need not be, but only constant enough to permit recognition, in case any one were aware of them. In the physical world such terms are things or objects. In the mental or spiritual world they are concepts, meanings, or other recurring entities such as particular values, persons, or what not. Now if these recur practically unchanged, it means that the tendencies or forces which constitute them must be held together. What is in general the condition of such holding together? What kinds of groups of tendencies would hold together? Those only which were in equilibrium. But the condition of equilibrium is a balance of opposing tendencies. Now whenever a number of tendencies are associated, it is practically certain that they will not be equal. Exact equality is indefinitely improbable; there will almost certainly be one greatest one. The group will stick together just so far as this strongest one is able to hold the rest; so far will they form a system of equilibrium about this superior one. Wherever such a group occurs, we shall have relative permanence, where there is no one tendency strong enough to hold others around itself, there will be no permanent terms, but only change. To speak in biological language, the only collocations or groups of tendencies that will be strong enough to survive the buffets of the environment are those in which one (or perhaps a very few) are so much stronger than the rest as to be able to hold

several in equilibrium; the stronger being naturally fewer than the weaker, the controlled more numerous than the controllers. *A priori* it is possible, of course, that two equal and opposite tendencies might meet and form a permanent group in equilibrium. But the degree of equality which this would require is very unlikely to exist. It is because difference and inequality are the natural state of affairs that asymmetrical equilibrium is to be expected in a law-abiding world of events. And with this our law of asymmetry appears to be no mere coincidence, but a very probable, *i. e.*, a rational thing.

Let no one here object, then, that we have dwelt too much upon the asymmetries in nature and mind, and overlooked or belittled the many instances of symmetry. Symmetry and uniformity are common enough. There is, first of all, space; there are also the approximately uniform atoms of each element; the electrons; the customs and manners in a given level of society; the sameness of dress, language, ideals, interests—and so on without end. Of course we admit all these, and we admit also, if one insists, their indispensableness. Sameness is as necessary as difference; approximate equality as decided inequality. But the whole question here raised is the question of their relative metaphysical value as needing further explanation, of their comparative degree of contribution to creativeness and progress. While both symmetry and asymmetry are real and indispensable, the latter is in a dynamic world the more ultimate and the more potent. It has higher metaphysical rank, and therefore it should receive the greater emphasis.

The view which I have set forth is not pluralism in the customary sense, because it does not deny the interdependence of the units in any field, or of all parts of reality. It is not what is usually delivered nowadays under the title of monism, though not inconsistent therewith, because monism contents itself with showing the organic unity of reality. Monism is an abstract and meager account of things. The unity of all that is real may be a very unimportant characteristic; for instance, it adds little to the intelligibility of the material world, that all parts of it are held in place by gravitation. Across the enormous distances which separate the stars, gravitation is of but trifling consequence. So it is with minds; many minds are no doubt spiritually as separate as the stars. Perhaps ultimately all are interdependent; but that interdependence contributes little to the understanding of individual, or even of national and racial traits. We need a more specific characterization of reality; one that bears upon the particular properties of real things; and as such I offer the law of asymmetry here expounded. Such a view, it seems to me, alone does justice to those irregularities and nodes in the

real continuum which modern pluralism and radical empiricism love to dwell upon; yet it does not, like those views, endeavor to refute the system of monism.

Finally, I may remark that monism, emphasizing symmetry and uniformity, favors current democratic ideals; whereas my own view, laying stress on distinctions and inequalities, tries to do justice to certain aristocratic motives which are in danger of being quite neglected to-day.

W. H. SHELDON.

DARTMOUTH COLLEGE.

PLURAL SOVEREIGNTY

EVER since I read Mr. Laski's interesting volume on *The Problem of Sovereignty*, the ideas of a pluralistic state and of pluralistic sovereignty, found there and elsewhere, have been troubling me. I felt that I had decided sympathy with the group idea in politics, I knew that I had no friendliness for the absolute state, but yet I felt uncomfortable in the presence of these ideas about plural sovereignty without quite knowing just what was the matter. The present paper is merely an attempt to make a little clearer to myself what is involved in these ideas and does not profess to offer any positive doctrine as to the proper and final meaning of sovereignty itself, for I recognize only too well with Willoughby "that there exists no other term in political science, regarding whose signification there exists such confusion and contradiction of thought, and in regard to which such an amount of dogmatism has been preached."[1]

The point of departure for the new doctrine is opposition to the classic idea of the necessary unity of sovereignty as expressed in Rousseau's contention that though power may be divided, will can not. Sovereignty, as the characteristic of the general will, is by its nature indivisible, for the will is, or is not, general. If general, it is one; if not general, it is only a particular will and can lay no claim to sovereignty. Either no state and no sovereignty, or one state and one sovereignty, is the doctrine. It is this traditional doctrine of the inherent and necessary unity of state and of sovereignty that the new doctrine opposes, contending, as I understand it, that this unity is as may be, that it is wholly a matter of fact, not deducible from the abstract ideas of either sovereignty or the state, but determinable empirically on the basis of the actual control exercised by any given state. It is not a question of the state in the abstract or of sover-

[1] *Nature of the State*, p. 185.

eignty in the abstract, but of given concrete states, and these may be one or many and their sovereignties likewise unitary or plural.

Sovereignty, as Laski sees it, is authority, and authority rests upon consent. The authority of law is merely its power to induce obedience and this power, in turn, is just the power that makes it to the interest of the subject to render obedience. Whether it is a matter of coercion or free assent, in all cases, there is no authority save as the individual's interest is evoked, either directly through his sharing in the state's purpose, or indirectly through the rewards and penalties inflicted through the agency of those who *are* directly interested. Sovereignty means nothing save as an actually effective motive working in society—it is "the ability to secure assent."[2] Whatever organization of men, by means of the interest of its embodied idea, has this ability to secure assent, is sovereign. The question is not one of right, but of fact. A sovereign who is not really sovereign, is really not a sovereign. The sole problem is as to whether a given organization actually can control. If it can not, it is itself subject to some other body able in fact to command allegiance.

To ask, then, of any given political or national entity, whether it contains one sovereign or many, is to ask whether there is one dominant interest or many. More specifically, it is to ask whether the institution we call the state actually has the ability to secure the assent necessary to constitute sovereignty or whether on occasion there may not be other organizations whose hold on men may be so strong as practically to supersede the sovereignty of the state. Reference to facts seems to show that frequently interests conflicting with the state make a stronger appeal than it to the allegiance of men, an appeal so strong that the state dare not resist it and is forced to give way to a sovereignty greater than its own. Again and again the church has defied the state and, with increasing frequency, the labor unions are doing the same. If this is the case, the argument runs, we must deny sovereignty to the state in any unique or unitary sense, and recognize it as only one of the organizations in the group, competing, by its offered interests, with other organizations for the allegiance of its members.

Or, to put it from the other point of view, the individual is a center of interests which have found for their satisfaction state and church and labor union, each of which is sovereign only in the degree to which its respective interest is dominant in the individual and can determine his action. Which interest actually is to be dominant is not determinable by reference to the concept of the institution,

[2] *Problem of Sovereignty*, 1, 14.

but solely by the facts of the social will of the time. Sovereignty is thus not an essential attribute of a unique institution, but a function of the relation of any institution to the interests of its members. Institutions may thus be regarded as bidding competitively for the good will and allegiance of their members, that one being sovereign in any case, or at any time, which can make the most attractive bid. And that the state often fails to make that most attractive bid we need small knowledge of history to tell us.

As one considers the fundamental principle of this doctrine of sovereignty, perhaps the first impression one gets is that it does not seem to be such a startling novelty as its proponents imply, nor even, perhaps, as dangerous. Surely it was not left for latter day pluralists and pragmatists to recognize that sovereignty rests on interest and not on some bloodless abstraction out of relation to human passion. Only the fathers called it the general will, or some such name as that. T. H. Green, for instance, in distinguishing the real basis of sovereignty from its nominal embodiment, says: "This power is a much more complex and less determinate, or less easily determinable thing; but a sense of possessing common interests, a desire for common objects on the part of the people, is always the condition of its existence. Let this sense or desire—which may properly be called general will—cease to operate, or let it come into general conflict with the sovereign's commands, and the habitual obedience will cease."[3] In other words, the ostensible sovereign loses the interested support of the people and sovereignty takes on another embodiment. Both this basis in interest and this possible shifting of interest are thus recognized by the older writers.

Whatever novelty the doctrine has, therefore, belongs to the inferences drawn from these facts. Just what these inferences are meant to be, however, I am unfortunately not wholly sure. But one such inference is that since the political organization representing the state in any given country is sometimes unable to control all its included groups, we must recognize the sovereignty as having passed from the state to that institution or group which has shown itself actually able to enforce its will, say a labor organization. But now what conditions of affairs do we have in such cases? When, for instance, to use an illustration of Mr. Laski's, the British miners during the war were able to hold up the government and enforce their demands, or the American railway men succeeded in securing their increases in wages and adjustment of time through threat of strike, it looks as if we had a threat of forcible resistance to established order preliminary to the overthrow of that order and the in-

[3] *Principles of Pol. Obligation*, §84.

troduction of anarchy. The unions seemed to be treating with the government not as subjects, but as equals, and threatening a state of war. There seemed more than a suggestion of opposing sovereigns within the limits of the national boundaries and a challenge to settle irreconcilable demands by the ordeal of battle. But the facts are susceptible of more than one interpretation. The question would turn on whether the protesting organization were opposing its own force to that of the state and obtaining supreme power to dispose of the affairs of the nation, thus superseding the political organization, or whether it were merely bringing its organized influence to bear upon the government to act in its special interest. The fact that five or ten per cent. of the citizens organized in an industry exert pressure upon the government to do its will is only an extreme instance of a normal occurrence. It may be only a more emphatic way of registering those protests which are often the necessary means by which citizens indicate their will to the government. The protest may be made, not as an alien group against the state, but as citizens with a special interest within the state. The resultant action of the government reflects this expression of the popular will, expressed in non-legal forms it is true, but yet in substance an expression of the civic will which constitutees the state. There is here nothing to indicate the transfer of sovereignty from the political to the industrial body, nothing to suggest a plurality of sovereigns.

The case would be different in so far as the protesting body explicitly repudiated the control of the government and asserted its right to take supreme control into its own hands. It would, in this case, be denying the claim of the government to represent the general will of the people and asserting its own fulfilment of that function. The condition would be one of rebellion or insurrection and the success of the revolt might lead to the establishment of a new government or a new political organization. But, as before, there seems nothing implying plural sovereignty. The general will has asserted itself by repudiating the government, its professed representatives, or by altering the general structure of political life and adopting a new constitution. There need be involved no idea of setting up beside the state a coordinate power, or of substituting purely industrial control for political sovereignty. The whole action may be a political movement though undertaken mainly for economic ends and led by industrial leaders. The struggle might have been one, not between competing sovereignties, but between rival claimants for the single sovereignty in the state. The end and prize is a political end and the struggle is to determine whose will is to be

the dominant one in determining the form of that end. The question is as to whose idea of the political good represents the general will and is to be the organizing principle of the state.

But we may have a third case, in which it is not a matter of a group within the state exerting pressure upon the government to accomplish its ends, or of an organization forcibly opposing the government by insurrection, where, in neither case, is it a question of the sovereignty of the state as such, but only of what party or group really represents the state. In this third case we may have a group refusing to recognize the sovereignty of the state as such and insisting that in matters pertaining to its special interests it has a sovereignty coordinate with that of the state itself. Under this hypothesis, we may have the church maintaining its autonomy in all that pertains to its own doctrine and polity and refusing to recognize the right of the state to interfere. And the church may happen to be such a powerful organization in the state that the majority of citizens may feel themselves churchmen rather than citizens and act as such whenever political and religious interests seem to clash. This seems to mean that we have here no more temporary clash between the state and a subordinate group recognizing itself as such, but a permanent and self-conscious division of powers between sovereign bodies, sovereign because they are able to make effective appeal to the interests of their respective members.

The idea of plural sovereignty here seems to have some meaning, yet still there remains some difficulty in the conception. The plurality would be clear enough, if, as in the case of national states, the sovereign bodies were distinct. We would then have distinct interests appealing to distinct wills and reaching a *modus vivendi* by external negotiation and treaty. There would be no unity of subjects and hence no unitary organization. But in the case of different organizations within a national group we have no such distinctness of effective wills, the component groups overlap. The churchmen may be to a large extent workers, and all are included in the political group. The division is not between the concrete individuals, but between the various interests of these individuals. The struggle is not between individuals, but between the conflicting interests of the same individual. It is the tragedy of the divided will. When, therefore, the pluralists insist on the analysis of the national state into component sovereign bodies and deny the reality of any unitary will and sovereignty, they seem to be reckoning without their host. The analysis and delimitation of functions is not to be done by separate entities but by the common body. It is not Tom the churchman and Dick the laborer and Harry the citizen

who treat as distinct sovereign powers, but Tom, Dick and Harry, churchman, laborer and citizen at once, who work out the *modus vivendi*. The appeal made by any organization, therefore, has its power over its members limited by the whole complex of interests embodied in them. Its appeal is a partial appeal to a partial self. The response of such a self, so far as it is a reflective and intelligent response, will therefore be made only in the light of its knowledge of its own complete interests and larger self. It will act as a whole and not merely as a part. In so far, however, as it acts as a whole, it is acting from a point of view which may properly be called that of the state, for no other institution professes to represent the interests of society as a whole. It is not relevant objection to this that the actual state does not represent the true general will, but is always a class institution, for a similar objection may be made to any organization that it does not realize its idea. It remains true none the less that the state is the only institution having for its function this organization of interests and groups, and that unless one is to despair of any such organization one must turn to what is a state in fact, if not in name. Man's unique interest in the state, as Hocking says, is "his unique interest in not being torn asunder"[4] by his competing interests or vital circuits. It is the very multiplicity of these interests and groups that distinguishes civilized life from primitive life with its few and statically determined groups and it is this that sets inevitably the fundamental problem of their organization. We may refuse to isolate the political organization and may identify it with an industrial organization, but under whatever name it may masquerade, there is bound to emerge some comprehensive body representing the principle of control in the interests of the whole and possessing authority based on its furtherance of those interests, an authority not coordinate with, but superior to, that of any special interest.

Of course, this raises the question, involved in the whole discussion, of the nature of the state as validating its claim to sovereignty, and it is upon his conception of the relation of the state to other associations that Mr. G. D. H. Cole bases his theory of social obligation. Instead of merely pointing out the actual failures in sovereignty, as does Mr. Laski, Mr. Cole takes his stand upon the distinction in function of the various associations within society, calling attention in this respect to the recent theories of corporate personalities as worked out by the English and German jurists. These associations are distinct entities and not merely subdivisions of an all-inclusive state. They differ in kind and not in extent and hence

[4] *Int. Journal of Ethics*, XXVIII., 321.

their interests and the claims based upon them can not be merged in those of the state. Under this interpretation the state is a merely geographical division ministering only to those common interests which are geographically conditional and bearing no real relation to the bodies representing religion and industry.

In spite of this unrelatedness of these various groups, however, he is not quite ready to admit that this means anarchy. The very process of functional devolution, as he calls this coordination and delimitation of groups, will tend to make conflicts less frequent since the limits of each association will be more strictly defined. The meddling of the state with labor will be no longer possible. But yet he admits that, while "a division of spheres would obviate many of the conflicts of to-day," yet "as both religion and, still more, industry, have their relations to men in their geographical groups, the possibility of conflict can never be altogether avoided."[5] In such cases of conflict where would sovereignty reside? "Clearly it can not lie in any one piece of machinery; either it is not embodied in any machinery at all, or else it exists only as the resultant of a system including many pieces of machinery of varying kinds."[6] Recognizing the fact that all machinery does violence to true will, he states the problem as that of finding the fullest possible organized type of will with which, if anywhere, sovereignty must rest. Such a will can not be that of the state, the church or industry. Nothing less than society, the complex of organized associations, can be the embodiment of the true general will. That society at present lacks determinate organization makes no difference from the theoretical point of view. To give it adequate machinery to fulfil its supreme function is the business of the practical man and not the philosopher. Mr. Cole's own final suggestion that probably some form of federation in which both the state and the other functional organizations might be represented, is the best we can hope for in the way of a machine making effective the will of the sovereign society. Ultimately, the individual will himself have to make his personal choice between institutions where conflict is not to be avoided, and the principle of his choice can only be the good of society as a whole.

I have called attention to this argument of Mr. Cole's; partly because, starting from the same apparently pluralistic conception of society as that held by Mr. Laski, he yet is forced to the recognition of what seems indistinguishable from a unitary sovereignty, though at present lacking in the machinery to render it effective in reality;

[5] "Conflicting Social Obligations," *Aristotelian Society Proceedings*, 1914–1915, p. 155.

[6] *Ibid.*, p. 156.

and partly because it reveals the difficulty involved in all discussions of political theory, that of the unfixity of fundamental terms, here the uncertainty as to the meaning of the term state. The pluralists make their point by emptying the concept of all but geographical content and then have no difficulty in opposing to it, as functionally different, the organizations of special interest, although, as a matter of fact, they are finally forced to recognize that as geographically conditioned these groups are related and that there is a good of the whole not provided for in the good of the parts. Since, however, the geographical group is the only universal group, comprising as it does the members of all groups, its own members, therefore, embodying the greatest variety of concrete and complex interests, it is hard to see why it is necessary to discard the state and recognize a new unity called organized or federalized society to be the bearer of the ultimate sovereignty. The possible improvement of political representation by the recognition of groups or guilds would seem a matter of governmental detail and not of special significance for the theory of sovereignty.

My conclusion then is, that the attempt to establish the theory of plural sovereignty, whether by proof of the actual failure of the state to maintain itself as against other organizations, or by evidence of the functional differences and coordination of groups within a given geographical area, fails because of its lack of recognition of the necessary demand for unity in the life of reason as well as by the arbitrariness of its limitations of the function of the state. Of course, one may escape from the state and its sovereignty by taking refuge in anarchy, just as one may avoid rational self control by giving rein to one's impulses, but, so long as one retains the conception of sovereignty at all, its unity in a state seems inevitable.

NORMAN WILDE.

UNIVERSITY OF MINNESOTA.

IS PLEASURE OBJECTIVE?

MR. WALLIS attempts, in two recent issues of this JOURNAL (June 5 and July 3), to give, in the interests of ethics, an "objective" definition of "pleasure." Pleasure is "the doing of a thing for its own sake, or, more accurately, that which, all things considered, should be done for its own sake." . . . Such an enterprise should not pass unchallenged, for it is not an isolated phenomenon, but is typical of a widespread contemporary impatience with the subjective, and twisting of psychological terms to behavioristic meanings. May I enter a demurrer?

1. Even granting that such concepts are more useful for ethics than that of "pleasure" in the old sense, it is too bad to confuse matters by adopting the old word for the new idea. Those of us who are not blessed with the behaviorist's blind spot seem to find a certain *quality* in our experience, of extraordinary interest, that we call "pleasure." Even supposing this quality never to be experienced except when we do things for their own sake, yet by the word "pleasure" we mean something other than the doing. To hold that this quality of experience really *is* the same thing as the activity in question is perhaps an arguable theory. But certainly until that theory is proved it would be misleading to call both things by the same name; while to deny that what people generally have meant by the word is a legitimate object of discourse would require still more elaborate argument. It is an interesting suggestion, that right and wrong really analyze down to activities-for-their-own-sake, instead of to activities-that-seek-pleasure-and-avoid-pain. But why confuse a discussion by stealing your opponents' word? Especially when theirs is the common usage of men?

2. Mr. Wallis's two definitions are, of course, quite incompatible. What I take him to mean, however, is that activity done for its own sake is *called* pleasure, thought of as pleasure, whereas only that which *should* be done for its own sake is *really* pleasure. That is, having taken the term at first in a physiological-psychological sense, he ends by using it as an ethical concept. This is blurring meanings still further, when what we need is discrimination. Surely his argument would be clearer if he would use for this ethical meaning the term "the morally good," or "the right."

3. It is this ethical use of "pleasure" which gives meaning to his statement that "the experience in the past adjudged a pleasure must, perforce, be readjudged in the light of this larger knowledge as less of a pleasure, or as no pleasure at all." The past experience can be adjudged to be bad, morally. But that judgment can not alter the fact that it was pleasant (in the usual sense, or in his own first sense) at the time when it was felt. If it was felt as a keen pleasure, then no moral disparagement can make that earlier rating untrue. That is to say, there are two standards of rating, the psychological rating, *qua* pleasure, and the ethical rating, *qua* morally good. Of course our own rating of the pleasantness of our experiences is, as he says, "not sacredly and invariantly true." We are careless in introspection, quickly forgetful, and highly inaccurate in comparisons between different experiences. But this inaccuracy of judgment as to the degree of pleasantness of an experience has nothing whatever to do with the condemnation of the activity that produced

the experience on moral grounds—*i. e.*, because of its subsequent results. To say that "the greatest pleasure is the realization of life purposes" is to pronounce a moral judgment—to say, namely, what is the *summum bonum*, what we *ought* to take most pleasure in. We do actually, of course, take keen pleasure in activities that thwart our life purposes. It would be an utterly forced use of language, to say that what most conduces to our life purposes is to be *called* "pleasantest." In other words, the "duality of judgment" is not, as Mr. Wallis would have it, between pleasure and the consciousness of that pleasure; it is between actually felt pleasure and the badness of the pleasurable act because of its *effects* upon *other* moments of experience.

4. But suppose we concede Mr. Wallis the right to use terms in his own way, however unusual. We have, then, for our criterion of right and wrong, instead of feelings of pleasure and pain (which are essentially private and non-measurable, and so an elusive guide) an objective criterion—the degree to which activities forward our life purposes. Here we have at least a "usable," "workable" concept. . . . But I wonder. Which life purpose is to be preferred? What are we to do when various life purposes conflict? And how shall we determine which of various possible lines of conduct will, in the end, best forward the chosen purpose? And must we ruthlessly turn away from all activities that do not forward that purpose? May not various activities be legitimate and desirable, other than those closely coordinated with a leading purpose? . . . In brief, I raise the question whether the proposed criterion really offers more definite guidance than the hedonistic criterion. After all, it is fairly easy to discover the general effects upon human happiness of various ideals of conduct; we are all much alike, capable of similar joys and griefs. Whatever uncertainty there is (and there is, of course, a good deal) is not to be removed by the discovery of a more "objective" criterion. Life must remain an experimental enterprise. Ethics can never be a hard-and-fast code, but must remain a series of suggestions, competing ideals, revealing unsuspected possibilities to this man, warning that man of pitfalls which others' experience has found, and bringing up the mass of obviously stupid and shortsighted conduct to the level of the relatively fortunate solutions discovered by the most successful.

5. Finally, the truth that existing "purposes" must be considered in our moral ideal, and not needlessly crossed, and the truth that it is well to have a dominating life purpose, are not the bottom truths of ethics. The question *why* remains. *Why*, ultimately, is it desirable to realize any purposes, rather than to cross them? Why a

"life purpose" rather than miscellaneous and transient purposes? What does it *matter* which way of life you choose? The answer, it seems to some of us, is that one road leads, in general, to greater happiness than the other; unless it does, there is no reason for preferring it. In short, we need not only objective clues to wise choice, we need a reason for choosing. In a world without hedonic differences there would be no use at all in having any ethics. The ultimate seat of all value is just this despised subjective, unsharable feeling of pleasure. Unless activities are going to produce that sort of feeling somewhere, in some one, they might as well not go on at all. To eliminate "pleasure" in the common, subjective sense of the term, is to eliminate the motif for ethics.

DURANT DRAKE.

VASSAR COLLEGE.

REVIEWS AND ABSTRACTS OF LITERATURE

The Realities of Modern Science: an introduction for the general reader. JOHN MILLS. New York: The Macmillan Company. 1919. Pp. xi + 327.

This is not a metaphysical inquiry. Philosophically the author is naïvely realistic. The purpose of the book is to give to the "general reader" an initiation into the terminology, and an acquaintance with the favorite entities of contemporary physical chemistry. So far as the author has any further thesis, it seems to be this, that molecules, atoms, and electrons have so frequently and variously been measured, with results so corroborating one another, and explain deductively so much which formerly was only in the status of "empirical" law, that they should now be considered no longer as hypothetical entities or convenient concepts, but as "the realities of science." The general reader to whom this book is addressed should not be too general a reader; preferably he should be a person who knew a considerable amount of physics and chemistry in former days, but has been neglecting them of late, and one, moreover, who can read a mathematical equation and have it mean something to him. Such a reader would indeed profit from what the author has to give him in the second half of this book.

The book, however, is two distinct books in one. The first half is taken up with a general review of science from the ancient Egyptians on down, through Thales and other well-known characters, with a few speculations as to the prehistoric. Even such a sketch, too hurried to be altogether accurate, may be of use to some readers, but scarcely to those who would profit from the rest of the book. After

a first chapter on electrons, there is then another introduction, this time mathematical. Force is here defined as a mathematical abstract concept of the rate at which energy changes over a space. Many readers would probably miss the point of these chapters, good as they are in substance. Then follows the second half of the book, the profitable part for most readers. It takes up such topics as the kinetic theory of gases, electric currents as moving electrons, equilibria, ions, *etc.* The exposition has a certain unity as an introduction to physical chemistry. Some beautiful bits of exposition are here interspersed with other sections that are quite unnecessarily puzzling. The author has done his work pretty well, yet gives the impression that he might have done it better.

There is a genuine place and need for popular expositions of scientific progress in the various fields, expositions which are not intended as text-books for embryo specialists, and do not assume too infantile an intellect on the part of the reader. Yet few writers who try it make much of a success at it: to be a Tyndall or a Huxley requires, it would seem, a peculiar gift. But some of the fault seems to be attributable to a lack of appreciation of the difficulty of the task, perhaps to a carelessness born of the feeling that science is changing rapidly, and such a book is bound to be ephemeral. Or the author, though knowing his subject, may forget his reader just long enough to cause the latter to lose the trail. Often the effort after simplicity results in scraps and fragments. This is possibly the commonest fault of all. Not enough is said on a given topic to drive it home. It is better to be rather repetitious and detailed, if only the outline is kept clear. Mental digestion, like physical, is not instantaneous. We might picture the intended reader as one willing to be interested, but tired after a hard day's work at other things. He is subject to occasional inattention, and so the important points need to be repeated and progress summarized from time to time. He may be unexpectedly ignorant or forgetful, and references to even the supposedly well-known should be in full. Comparison and analogy should be freely used. But most important of all, he is a human being, and the whole presentation ought, therefore, to be enlivened by anecdote or filled out by concrete detail, even though these be logically almost as redundant as the changes of posture and flourishes of a piece of chalk with which the skilled lecturer keeps his audience psychologically awake. Meanwhile the author can not argue difficult points, or put in the exact shade of qualification. The outcome is, that even after all effort and with the best intentions, your popular exposition may merely teach the unsuspecting reader a number of "facts that are not so." This is why the writing

of a book "for the general reader" is a problem whose solution requires a disproportionate expenditure of time and thought, only to leave us often in the end dissatisfied. Such, to a considerable degree, is the book before us.

H. T. COSTELLO.

COLUMBIA UNIVERSITY.

The Psychology and Pedagogy of Anger. ROY FRANKLIN RICHARDSON. Educational Psychology Monographs, No. 19. Baltimore: Warwick & York. 1919. Pp. 100.

This is a good attempt at a practical introspective study in a field where objective studies are extremely difficult. By combining the coincidences among the notes on 600 cases of anger recorded by a dozen observers, Richardson has worked out typical descriptions of the mental situation stimulating anger, the behavior of consciousness during anger and following its disappearance. Three different types of anger appear. (1) Arising from a fore-period of irritable feelings. (2) Arising from an idea exciting negative self-feeling and followed by an activity for restoring positive feelings of self-importance. (3) Arising from social sentiments involving justice and fairness and coming suddenly without cumulative development of the feeling. The author is much interested in the reactive side of consciousness. He finds attributive reactions which express the pugnacity of the basal instinct by hostile witticism, sarcasm, cutting remarks, *etc.*; or a contrary conscious attitude expressing, "What's the use?" or an indifferent reaction. By making his analyses after the collection of concrete examples, the method is an advance over the personal speculations which have hitherto been available.

The pedagogical chapter dwells upon the utilization of anger rather than upon overcoming it. "From a pedagogical view, it should be cultivated and excited aright." The teaching of "love your enemies" would, in the author's opinion, fall short. "Anger, sublimated into keener intellectual and willed action, . . . is working in better accord with the evolutionary function of the emotion—to intensify action in a needed direction." Is it possible that those with strong native tempers to-day have an advantage? One wonders.

J. B. MINER.

CARNEGIE INSTITUTE OF TECHNOLOGY.

JOURNALS AND NEW BOOKS

REVUE DE METAPHYSIQUE ET DE MORALE. January–February, 1919. *Critique de moi-même* (pp. 1–40): B. CROCE.–Croce's intellectual autobiography. *Ernest Renan et la philosophie contemporaine* (pp. 41–66): D. PARODI.–An interpretation of Renan's philosophy as an indispensable moment in the history of Romantic philosophy as we pass from Comte to Bergson. *Liberté et pensée* (pp. 67–88): M. DOROLLE.–Liberty is made by the effort to penetrate the individuality of consciousness and objective comprehension. *L'entropie, extension conservative* (pp. 89–118): L. SELME.–"Carnot's principle has nothing in common with all the vague beliefs in which it has been ingulfed. Freed from this improper rubbish, its resplendence will be a fertilizing source for the field of discoveries." *Etudes critiques. La métaphysique de Josiah Royce (suite)* (pp. 119–147): G. MARCEL. *Nécrologie: Gaston Milhaud.*

Lewis, C. I. A Survey of Symbolic Logic. Berkeley: University of California Press. 1918. Pp. vi + 406.

NOTES AND NEWS

THE National Research Council, which was established by the National Academy of Sciences during the war emergency, and which has proved its worth so often and in so many ways during the past few years, has now been reorganized on a peace-time basis and will continue its work of directing and coordinating research, particularly in connection with those problems which are too large in their scope or too many-sided for individual handling. As constituted at present, the Council consists of thirteen divisions, each with a resident chairman and a small office staff in the permanent headquarters at Washington, and several non-resident members. The first six of these divisions comprise the "general relations" group, and include divisions on Government, Foreign Relations, State Relations, Educational Relations, Industrial Relations and Research Information. The last is the largest of these divisions, and will be a clearing-house for information regarding the problems under investigation in the United States and their status. The other seven divisions are devoted each to some special line of science, and include divisions of Physical Science, Engineering, Chemistry, Geology, Medical Science, Biology and Agriculture, and Anthropology and Psychology.

We have just received from this last division, the following account of one interesting feature of their work:

"A special committee of the National Research Council, consisting of Dr. R. M. Yerkes, chairman, and Dr. M. E. Haggerty, of the University of Minnesota, Dr. L. M. Terman, of Stanford University, Dr. E. L. Thorndike, of Teachers College, Columbia University, and Dr. G. M. Whipple, of the University of Michigan, with financial support from the General Education Board, have formulated a plan for using the army mental tests in schools. Such intelligence tests have been used in schools for some time on individual children, but the new plan provides for handling them in groups, even whole class-rooms at a time. The committee selected about twenty tests for careful trial. This trial was made on five thousand children. As a result the committee has now been able to select from the tests two series which seem to be the most satisfactory and these will now be tried on several thousand more children in order that they may be further perfected before they are finally offered to the teachers of the country for general use.

"This carefully worked out programme for group tests will make it possible and practicable to make wholesale surveys of schools annually, or even semi-annually, so that grade classification and individual educational treatment can be adjusted with desirable frequency. It is expected that the methods will be ready to be published for general use early in 1920. The army tests on which these new group tests for children are based and which were used with striking success and advantage during the war, were originally devised by a group of psychologists working under the auspices of the National Research Council."

THE alumni of the University of Nebraska and former students of Dr. Wolfe are undertaking to raise a fund of $10,000, the income from which is to be devoted to the maintenance of a fellowship to be known as the Harry Kirk Wolfe Research Fellowship in Philosophy.

DR. EDWARD G. BORING, formerly of Cornell University, has been appointed professor of experimental psychology at Clark University to succeed the late Professor Baird.

SPECIAL NOTICE

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